

A REVISION OF THE GENUS *CACCOPECTUS*
(COLEOPTERA: PSELAPHIDAE)

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ABSTRACT

The genus *Caccoplectus* is removed from the Faronini and placed back in the Holozodini. This placement is based on the presence of the typically Macrosceline aedeagus and mesotrochanters, although the tarsal lengths indicate placement in the Faronini. Due to the reduction of the number of maxillary palpal segments to 3, the reduced teeth on the mandibles and their collection at light in Arizona with 2 species of myrmecophilous pselaphids (*Ctensis raffrayi* with *Veromessor juliana* and *Pilopius ocularis* with *Novomessor albisetosus*), the genus is presumed to be myrmecophilous. The genus is divided into 3 groups with 6 new species. The *spinipes*-group contains *spinipes* Schaeffer from Texas, *nuttingi* n. sp. from Arizona, *incultus* n. sp. from Baja California Sur and *sentis* n. sp. from Arizona. The *celatus*-group contains *celatus* Sharp from Central America, *bellingeri* Park from Jamaica, *inornatus* n. sp. from Panama and *pectinatus* n. sp. from Arizona. The *orbis*-group contains *orbis* n. sp. from Panama. Characters are shown in 46 figures.

The genus *Caccoplectus* is currently composed of 3 species: *celatus* Sharp from Panama, *spinipes* Schaeffer from Texas, and *bellingeri* Park from Jamaica. Each of these was described from a single holotype. This rarity of specimens is reflected in this study with 2 of the 6 new species described being known from single specimens. Almost all of the specimens were collected by blacklight traps, and in only one case was there more than 1 specimen collected the same night. Each catch of a single *Caccoplectus* at the Santa Rita Range Reserve in Arizona was accompanied by large catches of *Pilopius ocularis* (Casey) and *Ctensis raffrayi* Casey. The following new records indicate that these 2 species are myrmecophilous: *P. ocularis* with *Novomessor albisetosus* (Mayr) at Vail, Arizona (Karl Stephan Collection), and at Carr Canyon, Huachuca Mountains, Arizona (Los Angeles County Museum); *C. raffrayi* with *Veromessor juliana* (Pergande) at Santa Rosalia, Baja California Sur (Los Angeles County Museum). *Caccoplectus* possesses finely serrate mandibles and reduced maxillary palpi which are adaptations of many myrmecophilous pselaphids. It is probable that the genus is myrmecophilous and only flies during the most optimum conditions.

Caccoplectus presents problems in its placement at the suprageneric levels. Sharp (1887), using Reitter's classification of the family, placed the genus in the subfamily Bryaxinae, group Bryaxina. Raffray (1903, 1904) removed the genus to the new tribe Holozodini, group Macroscelia, of the Pselaphinae. Here it remained (Raffray 1908, Park 1942, 1943) until the revision of the subfamilies by Jeannel (1949). Jeannel's rearrangement was based on the relative lengths of the tarsal segments and the form of the male genitalia. In this paper *Caccoplectus* was placed in the Faronini of

the Faroninae. The Faroninae are characterized as having the first 2 tarsal segments short and the last much longer, the mesotrochanters short and the genitalia with the median lobe reduced or absent. The group Macroscelia of the Pselaphinae have the first tarsal segment short with the other 2 long, mesotrochanters long and the genitalia with a well-developed median lobe and 2 ventral styles (the other group of the Pselaphinae, the Brachyscelia, has short trochanters and similar genitalia without the styles). *Caccoplectus* was placed in the Faroninae solely on its tarsal form; however, the long mesotrochanters and the genitalia are clearly typical of the Macroscelia, not the Faroninae.

It appears that the genus must have been derived from the main pselaphid lineage at a time when the 2 subfamilies were not separated. Since that time the group has become specialized and probably acts as synoeketes in ant colonies. Based on the above characters and the general appearance of the genus, head and pronotum with large sulci and foveae, it is evident that the genus is a distinct and isolated group. The problem is its placement in the classificatory scheme. Since the universality of Jeannel's division by tarsal form does not appear to be consistent, and taking into account the greater number of shared characteristics with the Macroscelia, *Caccoplectus* is placed back in the Holozodini. From the written description of the other genus in the tribe (*Holozodus* from Madagascar) it appears that *Caccoplectus* is reasonably similar to it. Considering my unfamiliarity with the world fauna, I believe this is the better placement, at least for the moment, rather than describing a new tribe or subfamily.

One interesting note pertaining to the evolution of the family is that *Caccoplectus*, which combines certain characters of the Faroninae and Pselaphinae, and *Speleobama* which combines certain characters of the Brachyscelia and Macroscelia (Park 1953), are both found in North America. This indicates that the current major divisions within the family might have originated in the New World.

Caccoplectus is defined as those Pselaphidae with: head with deep vertexal sulci, antennae mounted on prominent tubercles, 2 gular foveae, small, 3-segmented maxillary palpi, antennae 11 segmented; pronotum with deep antebasal sulcus, lateral longitudinal sulci running from antebasal sulcus to anterior of pronotal angles and then ventrally to procoxae; elytra with 4 basal foveae; prepectus with lateral prepectoid foveae on posterior margin, median mesosternal fovea at junction with prepectus, median fovea behind mesosternal coxal cavities; mesolegs with femora distant from coxae; first 2 tarsal segments short, third much longer, 1 tarsal claw; aedeagus with median lobe, 2 ventral styles; 5 visible abdominal tergites, first sternite long from apex of elytra, 6 visible sternites, squamous pubescence in foveae, in mesosternopleural groove and often in sulci.

Caccoplectus can be divided into the *spinipes*-, *celatus*- and *orbis*-groups. The *spinipes*-group has: vertexal sulci hooked ventrally from vertex toward eyes, spinose armature on pro- and mesofemora, pro- and mesotibiae with ventral spines near apex, median longitudinal sulcus between base and antebasal sulcus. The *celatus*-group has: vertexal sulci not hooked ventrally, pro- and mesotibiae without spines, median longitudinal sulcus between base and antebasal sulcus. The *orbis*-group has: vertexal sulci not hooked ventrally, pro- and mesotibiae with ventral protuberance near apex, no median longitudinal sulcus, antennal tubercles flatly depressed from vertex.

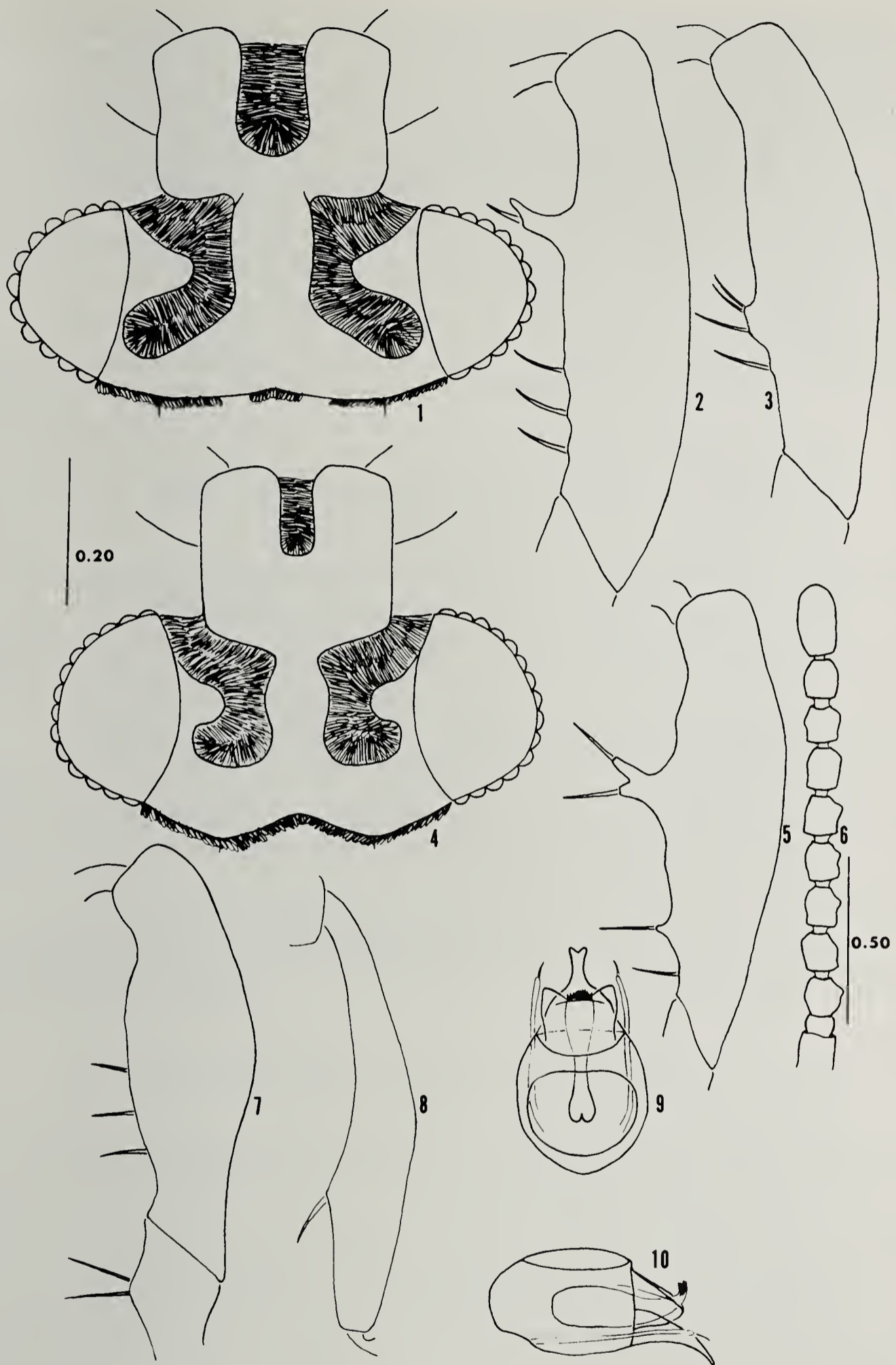


Fig. 1-3 *Caccoplectus spinipes*: 1) dorsal view of head; 2) lateral view of profemur; 3) lateral view of mesofemur.

Fig. 4-10 *Caccoplectus nuttingi*: 4) dorsal view of head; 5) lateral view of profemur; 6) lateral view of antenna; 7) lateral view of mesofemur and trochanter; 8) lateral view of mesotibia; 9) dorsal view of genitalia; 10) lateral view of genitalia.

All measurements in species descriptions are in millimeters. When pubescence is referred to in descriptions, it refers only to squamiform pubescence. Holotypes are placed in glycerin capsules. Drawings were made from specimens on slides. Antennal drawings were made at the same magnification. All other drawings except those of genitalia were made at the same magnification. Abbreviations for collections where specimens are deposited are those of Arnett and Samuelson (1969) where possible. Other abbreviations are: DSC, private collection of the author; KS, private collection of Karl Stephan, Tucson, Arizona; and MWS, private collection of Milton W. Sanderson, Illinois Natural History Survey, Urbana, Illinois.

Key to the Species of *Caccoplectus*

1. Vertexal sulci hooked ventrally toward eyes (Fig. 1), spines near apex of pro- and mesotibiae (Fig. 8) (*spinipes*-group) 2
- 1'. Vertexal sulci not hooked ventrally (Fig. 24); without spines near apex of pro- and mesotibiae (Fig. 31, 42) 5
- 2(1). Mesofemur ventrally with rounded tubercle near base bearing 3 of the 4 large spines near base (Fig. 3); Texas.....
..... *spinipes* Schaeffer
- 2'. Mesofemur without rounded tubercle (Fig. 7) 3
- 3(2'). Antennal segments III and IV without spinose projections ventrally or laterally (Fig. 6); with large ventral tubercle on mesofemur forked between spines (Fig. 5); Arizona.....
..... *nuttingi* n. sp.
- 3'. Antennal segments III to IV with spinose projections ventrally or laterally, large ventral tubercle on mesofemur not forked between spines (Fig. 12) 4
- 4(3'). Antennal segments III and IV with double ventro-lateral spinose projections (Fig. 22); Baja California Sur..... *incultus* n. sp.
- 4'. Antennal segments II and IV with single ventral spinose projection (Fig. 15); Arizona *sentis* n. sp.
- 5(1'). Pro- and mesotibiae with ventral protuberance near apex (Fig. 42); antennal tubercles depressed from vertex; antennal segments disk-like; without median longitudinal sulcus at base of pronotum; Panama (*orbis*-group)..... *orbis* n. sp.
- 5'. Pro- and mesotibiae without such a protuberance; median longitudinal sulcus at base of pronotum; antennae more quadrate (Fig. 26) (*celatus*-group) 6
- 6(5'). Protibiae with ventral face flattened and posteriorly expanded; antennal segments III to V concave ventrally; Jamaica *bellingeri* Park
- 6'. Protibiae not modified, antennal segments III to V subquadrate 7
- 7(6'). Mesofemora not dilated at middle (Fig. 32); pro- and mesofemora with 3 to 4 small setae between middle and base; Panama *inornatus* n. sp.
- 7'. Mesofemora dilated at middle (Fig. 25); spinose at apex of dilation 8

- 8(7'). Both pro- and mesofemora ventrally dilated at middle, numerous long spines on dilations; metatrochanter with 4 short spines (Fig. 40); antennal segments relatively long and narrow (Fig. 37); Arizona *pectinatus* n. sp.
- 8'. Only mesofemora ventrally dilated, spines at apex small and curved; male with U-shaped notch at apex of mesosternum (Fig. 27); no spines on metatrochanter; Mexico to Panama.....
..... *celatus* Sharp

Caccoplectus Sharp

Caccoplectus Sharp 1887:22 (genotype *Caccoplectus celatus* Sharp, fixed by monotypy). Raffray 1903:491, 1904:317, 1908:316. Schaeffer 1906:263, Bowman 1934:125. Park 1942:288, 1943:212, 1953:312-3, 1955:101. Jeannel 1949:16-7.

Caccoplectus spinipes Schaeffer
(Fig. 1-3)

Caccoplectus spinipes Schaeffer 1906:263-4 (Type loc.-Texas). Bowman 1934:125. Park 1953:312.

The holotype was briefly examined and sketched while visiting the United States National Museum. The following information is intended to supplement Schaeffer's description.

Pubescence encircling base of head broken for short distance a slight distance to either side of vertex; antennae resembling those of *sentis*; profemur with large tubercle near middle, tubercle with rounded lobe extending past origin of spine, 3 spines between tubercle and base; mesofemur with rounded tubercle at first third of length, with 3 spines arising from tubercle; tergite II with 2 areas of pubescence to either side of middle.

At the time I was comparing the holotype with a specimen of *sentis* and concluded the 2 were closely related due to the overall similarity.

Distribution: only 1 specimen examined. Holotype, TEXAS, Dietz. U.S.N.M. Type #62324.

Caccoplectus nuttingi Chandler, **new species**
(Fig. 4-10)

Brunnescent; head with pubescence in unbroken line around base, covering basal half of venter; median crest highest anterior to eyes, descending to flattened antennal tubercles; eyes large, approximately 50 facets; antennae with segment II transverse, segments III-X same length, IV-XI with slight ventral angulation, X-XI cylindrical, XI half again as long as X. Pronotum with short median longitudinal sulcus running from antebasal sulcus to base, pubescence filling median sulcus and antebasal sulcus to basal lateral foveae, with short bare area slight distance to either side of median sulcus; lateral longitudinal sulci with pubescence for short distance from antebasal sulcus, pubescence on anterior margin of prosternum between lateral pronotal angles, also from lateral foveae to base. Elytra with medial 3 basal foveae with striae reaching apex of elytra, outer fovea without stria; apex with band of pubescence.

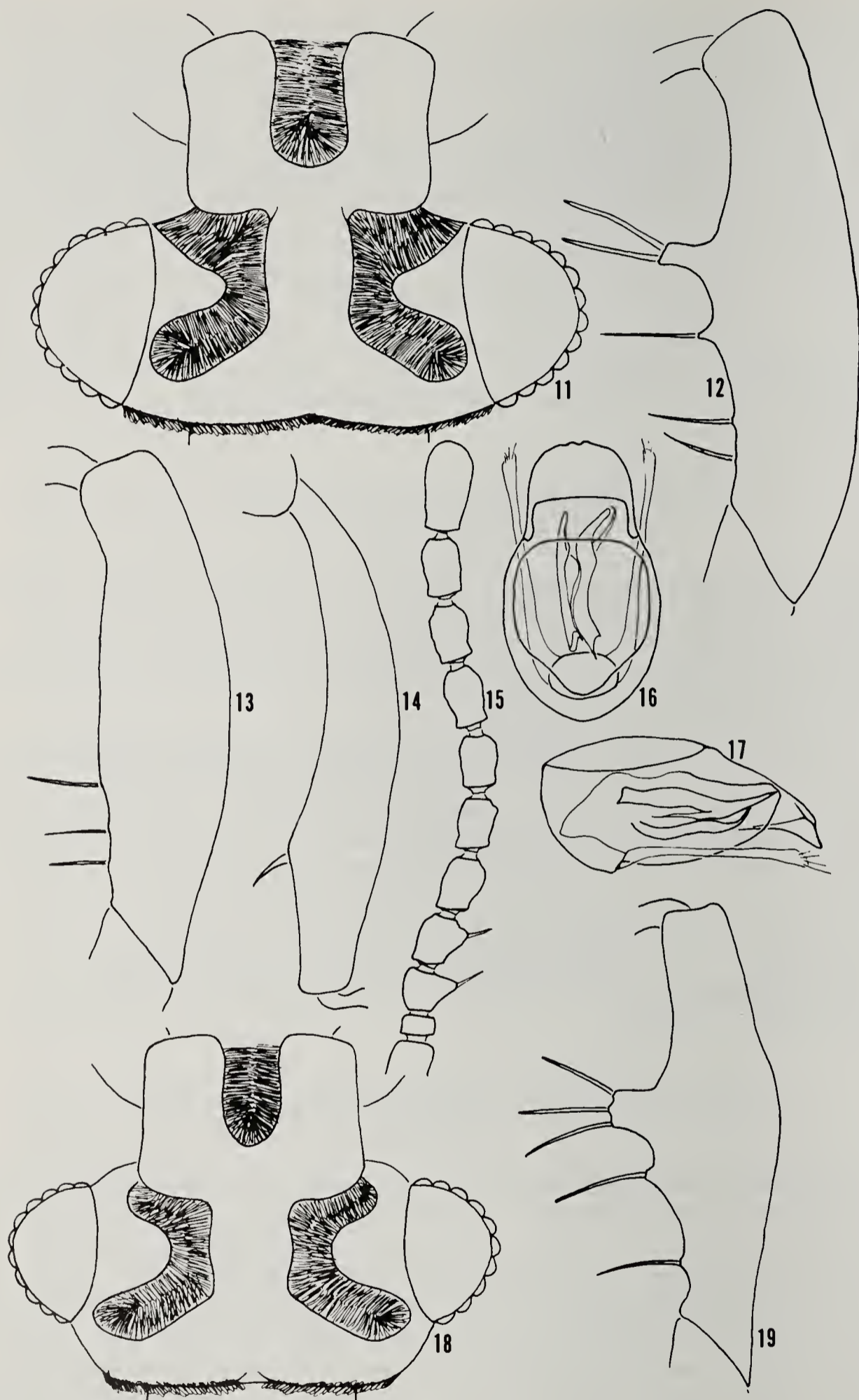


Fig. 11-17 *Caccoplectus sentis*: 11) dorsal view of head; 12) lateral view of profemur; 13) lateral view of mesofemur; 14) lateral view of mesotibia; 15) lateral view of antenna; 16) dorsal view of genitalia; 17) lateral view of genitalia.

Fig. 18-19 *Caccoplectus incultis*: 18) dorsal view of head; 19) lateral view of profemur.

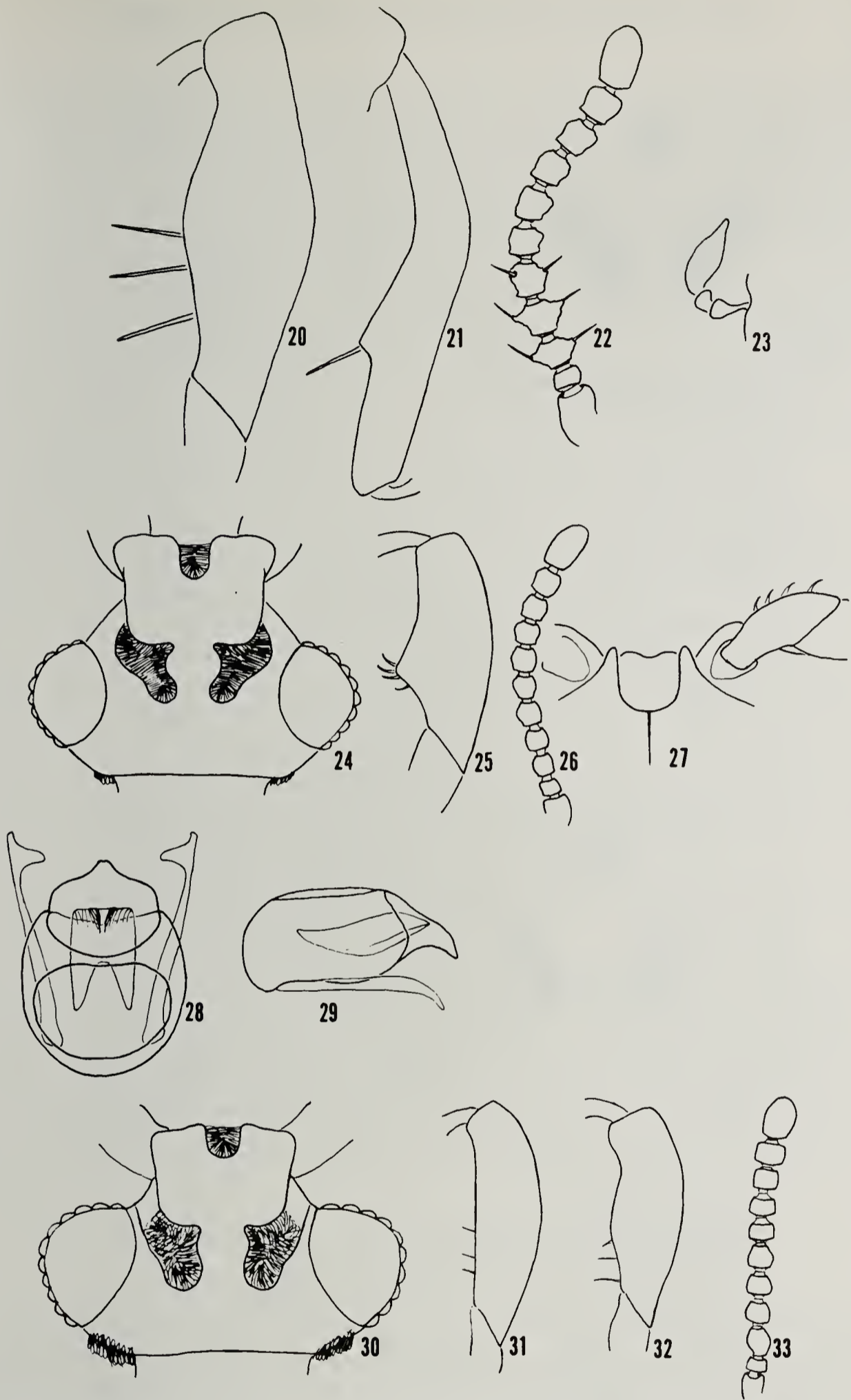


Fig. 20-23 *Caccoplectus incultis* 20) lateral view of mesofemur; 21) lateral view of mesotibia; 22) ventral view of antenna; 23) right maxillary palpus.

Fig. 24-29 *Caccoplectus celatus*: 24) dorsal view of head; 25) lateral view of mesofemur; 26) lateral view of antenna; 27) ventral view of apex of metasternum; 28) dorsal view of genitalia; 29) lateral view of genitalia.

Fig. 30-33 *Caccoplectus inornatus*: 30) dorsal view of head; 31) lateral view of profemur; 32) lateral view of mesofemur; 33) lateral view of antenna.

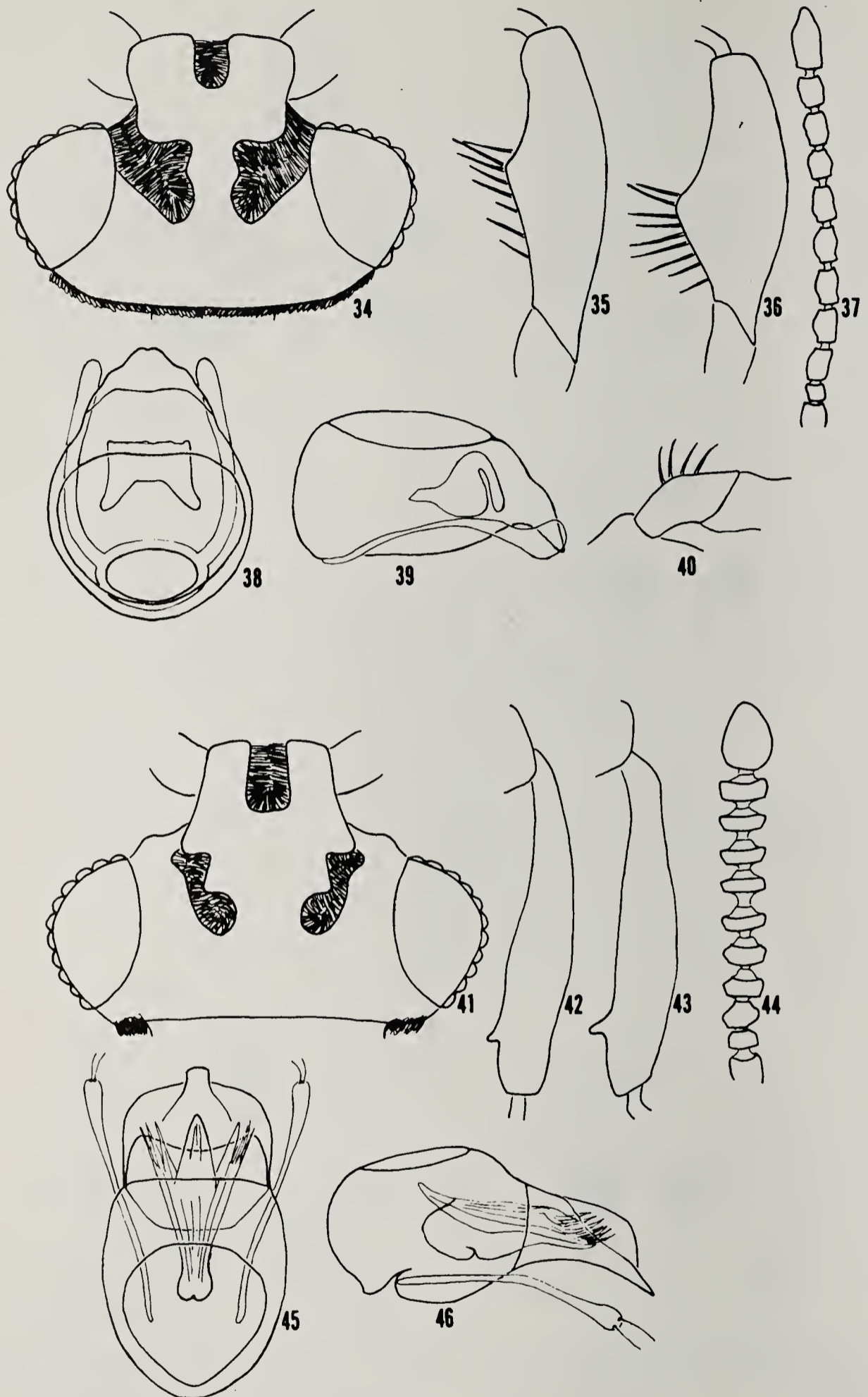


Fig. 34-40 *Caccoplectus pectinatus*: 34) dorsal view of head; 35) lateral view of profemur; 36) lateral view of mesofemur; 37) lateral view of antenna; 38) dorsal view of genitalia; 39) lateral view of genitalia; 40) ventral view of metatrochanter.

Fig. 41-46 *Caccoplectus orbis*: 41) dorsal view of head; 42) lateral view of protibia; 43) lateral view of mesotibia; 44) lateral view of antenna; 45) dorsal view of genitalia; 46) lateral view of genitalia.

Band of pubescence separating prepectus from mesosternum. Profemur with prominent forked ventral tubercle, each fork with large spine, 2 or 3 large spines between tubercle and base, usually equidistant, first spine near base; protibia with curved spur near middle; mesofemur with 3 equidistant, large spines, mesotrochanter with 2 long spines in male, 4 shorter spines in female, mesotibia with curved spur at two-thirds of length.

Visible sternites I-V with 1 lateral fovea on each side, sternite VI evenly rounded at apex, anterior margin of sternites II-V with bands of pubescence, sternites I-III with bands of pubescence at apex, band on II-III widely interrupted at center; tergite I with 2 lateral foveae on each side, II-IV with 1 lateral fovea on each side, I-IV with complete band of pubescence on anterior margins, extending across lateral margins, tergites I-II with pubescence at apex, broadly interrupted at middle; length 2.57-2.76mm.

Male holotype: International Biological Program Site, Santa Rita Range Reserve, ARIZONA. Length 2.76. Head 0.50 long, 0.65 across eyes, 0.29 wide across base of antennal tubercles, median antennal sulcus 0.13 long, length antennal segments I-XI: I 0.15, II 0.08, III 0.15, IV 0.15, V 0.15, VI 0.15, VII 0.15, VIII 0.16, X 0.16, XI 0.23. Pronotum 0.53 long, 0.47 wide at base, 0.34 wide at apex, median longitudinal sulcus 0.08 long, width of pubescence at median portion of antebasal sulcus 0.15, break-in pubescence 0.06 wide. Elytra 0.78 long at median suture, 0.61 wide across humeri. Lengths from base to spines on profemur, spine 1 0.03, spine 2 0.11, 0.28 to first spine on tubercle, this spine 0.09 long; protibia with spur 0.38 from base; length from base to spines on mesofemur, spine 1 0.10, spine 2 0.15, spine 3 0.20, mesotibia with spur 0.38 from base; spines on mesotrochanter 0.08 long. Genitalia with penis fringed at apex.

Female with 4 short spines on mesotrochanter, with 3 spines between tubercle and base on profemur.

Distribution: south-central Arizona. Holotype male: International Biological Program Site, Santa Rita Range Reserve, Pima County, 12-15-VII-1973, W. L. Nutting, UV trap. Paratypes: 2 males, same data except 27-29-VII-1973 (UAIC) and 3-5-VIII-1973 (DSC). 1 female not designated paratype is associated with this species, Organ Pipe Cactus National Monument, Pima County, 6-VIII-1968, G. D. Butler & F. G. Werner (DSC). The holotype is to be deposited at the Field Museum of Natural History, Chicago.

Caccoplectus sentis Chandler, **new species**

(Fig. 11-17)

Brunnescent; head with pubescence in unbroken line around base, covering basal half of venter; median crest highest anterior to eyes, descending to flattened antennal tubercles; eyes large, approximately 54 facets; antennae with segment II very short and transverse, III with bulge anteriorly and prominent ventral projection with terminal spine, IV with less prominent ventral projection and spine, V-IX slightly protruding ventrally, segments III-IX equal in length, X slightly smaller, cylindrical, XI slightly longer, cylindrical. Pronotum with short median longitudinal sulcus running from antebasal sulcus to base, pubescence filling median sulcus and antebasal sulcus to basal lateral foveae, short bare area slight distance to either side of median sulcus; pubescence filling lateral longitudinal sulci short distance anteriorly from antebasal sulcus, present in band be-

tween lateral pronotal angles across prosternum, running from lateral foveae to base. Elytron with medial three basal foveae with striae reaching apex, outer fovea without stria; apex with band of pubescence.

Band of pubescence separating prepectus from mesosternum. Profemur with prominent ventral tubercle near middle, 2 to 3 large spines between base and tubercle, equidistant from base and each other, tubercle with 2 to 3 spines at apex, often with another spine rising from base of tubercle or more slightly medial, protibia with slightly curved spur at two-thirds of length, mesofemur with 3 spines near base, equal distances apart and from base, often with fourth spine at middle, mesotibia with ventral short, thick, slightly curved spur at three-fourths of length.

Visible sternites I-V with 1 lateral fovea on each side, sternite VI with small indentation at middle on posterior edge, anterior margin of II-V with bands of pubescence, I-III with pubescence at apex, II-III with pubescence widely broken at center; tergite I with 2 lateral foveae on each side, II-IV with 1 lateral fovea on each side, I-IV with complete band of pubescence on anterior margins, extending across lateral margins, I-II have patches of pubescence at apex, 2 smaller patches at the middle and 2 larger ones near abdominal margins; length 2.88-3.28mm.

Male holotype: Cochise Stronghold, ARIZONA. Length 3.05. Head 0.55 long, 0.73 wide across eyes, 0.34 wide across base of antennal tubercles, median antennal sulcus 0.15 long; length antennal segments I-XI: I 0.18, II 0.08, III 0.14, IV 0.20, V 0.18, VI 0.18, VII 0.20, VIII 0.20, IX 0.19, X 0.18, XI 0.30. Pronotum 0.55 long, 0.55 wide at base, 0.35 wide at apex, median longitudinal sulcus 0.13 long, width of pubescence at median portion of antebasal sulcus 0.18, break in pubescence 0.03 wide. Elytron 0.95 long at median suture, 0.83 wide across humeri. Lengths from base to spines on profemur, spine 1 0.08, spine 2 0.16, spine 3 0.26, 0.32 to first spine on tubercle, this spine 0.10 long, protibia with spur 0.43 from base, lengths from base to spines on mesofemur, spine 1 0.08, spine 2 0.13, spine 3 0.19, mesotibia with spur 0.40 from base. Genitalia with penis in from of distinct spines.

Female unknown.

Distribution: intermediate elevations in eastern Arizona. Holotype male: Cochise Stronghold, Dragoon Mountains, Cochise County, Arizona, 27-30-VII-1970, R. J. Shaw, Ultraviolet light trap. 6 Paratypes: 2 males, same data except 1 each on 21-24-VII-1970 and 3-6-VIII-1970 (DSC, UAIC); 1 male, same locality 29-VII-1957, C. W. O'Brien, at light (UCDC); 1 male, same locality, 13-VIII-1958, C. W. O'Brien, light trap (UAIC); 1 male, Canelo, Santa Cruz County, 12-VIII-1959, G. D. Butler (UAIC); 1 male, Graham Mountains, Noon Creek, Graham County, 1-VIII-1957, G. D. Butler (UAIC). The holotype is to be deposited at the Field Museum of Natural History, Chicago.

Caccoplectus incultis Chandler, **new species**
(Fig. 18-23)

Brunnescent; head with pubescence around base barely broken at vertex, covering basal half of venter; low median crest highest between eyes, descending to flattened antennal tubercles; eyes moderate, approximately 30 facets; antennae with segment II short and transverse, II-IV with paired

ventro-lateral projections, with spines at apex of projections, V with projections reduced, with spines at apex, IV-V same length, VI-X slightly shorter, XI half again as long as X. Pronotum with short median longitudinal sulcus running from antebasal sulcus to base, pubescence filling median sulcus and antebasal sulcus to lateral foveae, short bare area to either side of median sulcus; pubescence filling lateral longitudinal sulci a slight distance from base, present on prosternum between lateral pronotal angles, running from lateral basal foveae to base. Elytron with medial 3 basal foveae with striae reaching apex, outer fovea without stria; apex with band of pubescence.

Band of pubescence separating prepectus from mesosternum. Profemur with prominent ventral tubercle tipped with three large spines, 2 large spines between tubercle and base, protibia with large ventral spur at two-thirds of length, mesofemur with 3 large spines in basal half, mesotibia with large ventral spine at two-thirds of length.

Visible sternites I-V with 1 lateral fovea on each side, sternite VI evenly rounded at apex, anterior margin of II-V with bands of pubescence, I-III with band of pubescence at apex, band on II-III broadly interrupted at center; tergite I with 2 lateral foveae on each side, II-IV with 1 lateral fovea on each side, I-IV with complete band of pubescence on anterior margins, extending across lateral margins, I-II with band of pubescence at apex.

Female holotype: La Burrera, BAJA CALIFORNIA SUR. Length 2.88. Head 0.45 long, 0.54 across eyes, 0.40 wide across base of antennal tubercles, median antennal sulcus 0.13 long, length of antennal segments I-XI: I 0.19, II 0.08, III 0.11, IV 0.14, V 0.14, VI 0.13, VII 0.13, VIII 0.13, IX 0.14, X 0.13, XI 0.21. Pronotum 0.50 long, 0.34 wide at base, 0.23 wide at apex, median longitudinal sulcus 0.10 long, width of pubescence at median portion of antebasal sulcus 0.13, break in pubescence 0.03 wide. Elytra 0.70 long at median suture, 0.62 wide across humeri. Lengths from base to spines on profemur, spine 1 0.06, spine 2 0.16, 0.24 to first spine on tubercle, this spine 0.11 long, protibia with spur 0.36 from base, length from base to spines on mesofemur, spine 1 0.07, spine 2 0.13, spine 3 0.17, mesotibia with spur 0.35 from base.

Male unknown.

Distribution: single specimen, holotype female: La Burrera, Baja California Sur, MEXICO, 17-X-1968, E. L. Sleeper. The holotype is to be deposited at the Field Museum of Natural History, Chicago.

Caccoplectus celatus Sharp
(Fig. 24-29)

Caccoplectus celatus Sharp 1887:22, Pl. 1, Fig. 11 (Type loc.-Zapote, Guatemala, type in British Museum of Natural History). Raffray 1904:317, 1908:316. Park 1942:288, 1943:209.

Brunnescent; head with pubescence at base only in small bands behind eyes on venter; median crest slightly elevated above eyes, descending to flattened antennal tubercles; eyes moderate, approximately 35 facets; antennae with segment II short and transverse, segments III-X submoniliform,

same length, truncate basally, XI as long as IX and X together. Pronotum with short median longitudinal sulcus running from antebasal sulcus to base, pubescence only in areas of median and lateral basal foveae and extending posteriorly for short distance in median sulcus. Elytra with medial three basal foveae with striae reaching apex of elytron, outer fovea without stria; apex with band of pubescence.

Pubescence filling prepectoid and mesosternal foveae. Metasternum with 2 long, blunt projections near apex, forming U-shaped notch; tibiae and profemora unmodified, mesofemur medially angulate ventrally, with 4 short, curved setae about the apex, metatrochanter with 4 short, curved setae on posterior edge.

Visible sternites I-V with 1 lateral fovea on each side, sternite VI evenly rounded at apex, anterior margin II-V with band of pubescence in female, in male with complete band on sternite I, restricted to small lateral patches on III-V, I with band of pubescence at apex; tergite I with 2 lateral foveae on each side, II-IV with 1 lateral fovea on each side, I-IV with band of pubescence on anterior margins, I with band complete, following tergites with increasing width of break at center, no pubescence on posterior margins, male with sternite II with 2 small, indented depressions at center of apex, more densely setose with short setae than rest of margin, area behind these depressions on sternite III bare, with emargination on anterior margin; length 2.12-2.16 mm.

Redescribed male: Albrook Forest Site, Canal Zone, PANAMA. Length 2.12. Head 0.33 long, 0.40 wide across eyes, 0.19 wide across base of antennal tubercles, median antennal sulcus 0.06 long, length antennal segments I-XI: I 0.11, II 0.05, III 0.08, IV 0.08, V 0.09, VI 0.09, VII 0.09, VIII 0.09, IX 0.09, X 0.09, XI 0.18. Pronotum 0.50 long, 0.31 wide at base, 0.26 wide at apex, median longitudinal sulcus 0.08 long, length of pubescence in sulcus 0.02, width of pubescence at middle of antebasal sulcus 0.08, width of break between pubescence in median and lateral foveae 0.10. Elytra 0.56 long at median suture, 0.59 wide across humeri. Lengths from base to setae on mesofemur, seta 1 0.04, seta 4 0.10, length seta 4 0.03, setae on metatrochanter 0.02 long, width between tips of projections on metasternum 0.10. Genitalia with penis blunt at apex, styles abruptly widened near apex.

Female without metasternal projections, lacking setate depression at apex of sternite II and smooth medial area of sternite III.

Distribution: throughout Central America. Two specimens examined: 1 male, Albrook Forest Site, Fort Clayton, Canal Zone, PANAMA, 6-7-XII-1967, R. Hutton, black light trap (MWS). 1 female, Tampico, Tamaulipas, MEXICO, 16-XII, E. A. Schwarz (USNM). The type locality is Zapote, Guatemala, and Raffray (1890) mentioned a specimen from the "tubacs" of Mexico.

Caccoplectus inornatus Chandler, **new species**
(Fig. 30-33)

Brunnescent; head with pubescence at base extending from behind eyes across venter, vertex between eyes smoothly confluent with flattened antennal tubercles; eyes large, approximately 47 facets; antennae with segment II short, quadrate, IV-IX obconical, same length, X quadrate, slightly larger, XI shorter than IX and X together. Pronotum with short median longitudinal sulcus running from antebasal sulcus to base; pu-

bescence in sulcus and in area of median and lateral basal foveae, present in bands on lateral portions of prosternum, widely separated at center. Elytron with medial three basal foveae with striae reaching apex, outer fovea without stria; apex with band of pubescence.

Pubescence filling prepectoid and mesosternal foveae. Profemur with 3 short setae between middle and base in male, 4 similar setae in female, mesofemur with 3 setae between middle and base, 4 such setae in female.

Visible sternites I-V with 1 lateral fovea on each side, sternite VI angularly emarginate at apex, anterior margin of II-V with bands of pubescence, band on V broken at center, I with band of pubescence at apex; tergites I-IV with 1 lateral fovea on each side, I-IV with bands of pubescence on anterior margins, band on IV widely interrupted at center, I-II with patches of pubescence at apex. Length 1.70-1.90mm.

Male holotype: Albrook Forest Site, Canal Zone, PANAMA. Length 1.90. Head 0.29 long, 0.41 wide across eyes, 0.15 wide across base of antennal tubercles, median antennal sulcus 0.05 long, length antennal segments I-XI: I 0.09, II 0.05, III 0.10, IV 0.09, V 0.09, VI 0.09, VII 0.09, VIII 0.09, IX 0.09, X 0.10, XI 0.16. Pronotum 0.33 long, 0.30 wide at base, 0.25 wide at apex, median longitudinal sulcus 0.07 long, width of pubescence at median fovea 0.05, 0.10 wide between pubescence in lateral and median foveae. Elytra 0.53 long at median suture, 0.40 wide across humeri. Lengths from base to setae on profemur, seta 1 0.04, seta 3 0.09, length from base to setae on mesofemur, seta 1 0.10, seta 3 0.06. Genitalia lost.

Female with approximately 30 eye facets, profemur and mesofemur with 4 short setae between middle and base, antennae slightly more disc-like with apical ends more drawn out, band of pubescence at apex of sternite I broken at center, as wide as distance between metacoxae.

Distribution: both records from Panama. Holotype male: Albrook Forest Site, Fort Clayton, Canal Zone, PANAMA, 1-2-VI-1967, Hutton & Llaurodo, black light trap. Paratype, 1 female, same data except 8-9-VI-1967 (MWS). Holotype to be deposited at the Field Museum of Natural History, Chicago.

Caccoplectus pectinatus Chandler, **new species**

(Fig. 34-40)

Brunnescent; head with pubescence in unbroken line around base, covering basal half of venter; median crest barely higher than flattened antennal tubercles, highest between eyes; eyes large, approximately 63 facets; antennae with segment II short and transverse, segments IV-X slightly angulate ventrally, XI almost pointed at apex, III-VIII same length, VIII-X gradually decreasing in length. Pronotum with short median longitudinal sulcus running from antebasal sulcus to base, pubescence filling sulcus to just short of base, bare area to either side of median fovea, breaking band of pubescence in antebasal sulcus, pubescence extending short distance up lateral longitudinal sulci, not extending posteriorly from basal lateral foveae to base, band on anterior margin of prosternum. Elytron with medial 3 basal foveae with striae reaching apex; apex with band of pubescence.

Pubescence in prepectoid and mesosternal foveae. Profemur with ventral angulation, 6 to 7 spines arising between base and apex of angulation, protibia and mesotibia without spines, mesofemur with prominent ventral

angulation, 7 to 9 spines arising between base to just past apex of angulation, metatrochanter with 4 posterior spines.

Visible sternites I-V with 1 lateral fovea on each side, sternite VI evenly rounded at apex, anterior margin of II-V with bands of pubescence, I-III with pubescence at apex, II-III with pubescence interrupted at center; tergite I with 2 lateral foveae on each side, II-IV with 1 lateral fovea on each side, I-IV with complete band of pubescence on anterior margins, extending across lateral margins, I-II with bands of pubescence across apex; length 2.22-2.43mm.

Male holotype: Tucson, ARIZONA. Length 2.33. Head 0.44 long, 0.48 wide across eyes, 0.19 wide across base of antennal tubercles, median antennal sulcus 0.07 long, length antennal segments I-XI: I 0.15, II 0.06, III 0.13, IV 0.13, V 0.13, VI 0.14, VII 0.14, VIII 0.13, IX 0.13, X 0.13, XI 0.22. Pronotum 0.41 long, 0.47 wide at base, 0.26 wide at apex, median longitudinal sulcus 0.16 long, pubescence in sulcus 0.14 long, width of pubescence at median portion of antebasal sulcus 0.07, break in pubescence 0.08 wide. Elytra 0.63 long at median suture, 0.49 wide across humeri. Length from base to spines on profemur, spine 1 0.07, spine 8 0.18, length from base to spines on mesofemur, spine 1 0.05, spine 9 0.13, length spine 9 0.14, length spines on metatrochanter 0.05. Genitalia with penis smoothly curved at apex.

Female unknown.

Distribution: central ARIZONA. Holotype male: Tucson, Pima County, Arizona, 21-VIII-1968, K. Stephan. 3 paratypes: 2 males, eutopotypical (DSC, KS); 1 male, Boyce Thompson S. W. Arboretum, Superior, Pinal County, 15-IX-1949, B. W. Benson, light trap (INHS). The holotype is to be deposited at the Canadian National Collection, Ottawa.

Caccoplectus orbis Chandler, **new species**

(Fig. 41-46)

Dark brunnescent; head with pubescence at base extending from behind eyes across venter, median crest before eyes descending to oblique, flattened antennal tubercles; eyes large, approximately 63 facets; antennae with segment II short, quadrate, III-X expanded medially, disc-like, XI obconical, as long as IX and X together. Pronotum without median longitudinal sulcus, two small swellings at center of basal margin, pubescence only in minute median and large lateral basal foveae, pubescence on anterior margin of prosternum broken at center and again laterally. Elytron with sutural stria reaching apex, middle two foveae with striae only half length of elytron, outer fovea without stria; apex with pubescence.

Pubescence filling prepectoid and mesosternal foveae; pro- and mesotibiae with projection on ventral side near apex, no modifications of femora.

Visible sternites I-V with 1 lateral fovea on each side, VI evenly rounded at apex, anterior margin of II-V with bands of pubescence, I with band of pubescence at apex; tergites I-IV with one lateral fovea on each side, I with thin band of pubescence on anterior margin, separated at middle, II-III with small patches of pubescence near lateral abdominal margins, IV with small dorsal projections at center of lateral margins.

Male holotype: Albrook Forest Site, Canal Zone, PANAMA. Length 2.38. Head 0.40 long, 0.51 across eyes, 0.20 wide across base of antennal tubercles, median antennal sulcus 0.06 long, length antennal segments I-XI: I 0.12, II 0.07, III 0.09, IV 0.10, V 0.11, VI 0.10, VII 0.10, VIII 0.10, IX 0.10, X 0.10, XI 0.20. Pronotum 0.35 long, 0.43 wide at base, 0.31 wide at apex, width between pubescence of median fovea and lateral foveae 0.15. Elytra 0.63 long at median suture, 0.58 wide across humeri; spur on protibia 0.30 from base, spur on mesotibia 0.33 from base. Genitalia with penis fringed and at apex.

Female unknown.

Distribution: only known from PANAMA. Holotype male: Albrook Forest Site, Fort Clayton, Canal Zone, PANAMA, 3-4-VIII-1967, Hutton & Llaurado, black light trap. The holotype is to be deposited at the Field Museum of Natural History, Chicago.

Caccoplectus bellingeri Park

Caccoplectus bellingeri Park 1955:101-105 (Type loc.-Morce's Gap Trail, St. Andrew Parish, Jamaica, type in Field Museum of Natural History, Chicago).

I have seen no examples of this species. The male holotype has antennal segments III-V concave ventrally, metasternum with U-shaped notch as in *celatus*, profemora medially expanded to long, blunted, triangular tooth, protibiae with ventral face flattened and posteriorly expanded.

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